D. AUDITS

One of the most important aspects of safety is the auditing function which determines the compliance of the equipment designs and administrative procedures with established criticality prevention criteria. Experience has shown that the auditing function should be started near the beginning of a design project and be carried on during subsequent normal operation as a routine event.

1. Design Review

A criticality review of the scope design of each piece of equipment and of the overall facility is necessary at the very beginning of a new project to establish the safety parameters and guidelines for future detailed design. Using the scope design review as a guide, the detailed design should be reviewed as often as necessary to assure that each individual piece of equipment is subcritical in the worst foreseeable process condition. At the completion of the design phase, a hazards review (including all elements of safety, as well as criticality) should be conducted. The depth of the review depends on the complexity of the piece of equipment or new facility. A final hazards review in depth should be made just prior to the start-up of a new facility and may form the basis for a safety analysis report.

2. Criticality Prevention Specification

Coincidental with the final hazards review (or slightly before) the criticality prevention specifications are prepared by the responsible department using the technical criteria as a basis. The acceptance of these specifications by the plant operations manager implies that adequate administrative procedures can be formulated and enforced and that these procedures are auditable. These specifications may be modified at any time,

but the modification requires the same signatory approval as the original specification.

Subsequent day-to-day audits by the operational personnel, quarterly audits by Operational Support Engineering and Research and Development personnel, and annual audits by external criticality specialists form a sound basis for criticality control. The reports of these audit groups give a measurement of the adequacy of criticality prevention throughout Atlantic Richfield Hanford Company (ARHCO).

3. Facilities Change Notice

The operation of any plant requires modification and/or equipment replacements on a day-to-day basis. Hazards control in major projects is handled via scope reviews, criticality prevention specifications, etc., as defined above. A small equipment modification or a series of small modifications, however, could result in a loss of control and could end in a criticality incident. To assure adequate and continuous control of criticality, a facilities change notice is employed to describe any planned physical changes to plant or equipment. The notice once initiated by a responsible person is submitted to the Operations Support Engineering group for review for potential chemical or criticality hazards. When appropriate, nuclear safety experts are requested to review the change. All changes involving equipment handling fissile materials must be reviewed prior to making the physical change.

If the facility change is considered to affect criticality safety adversely, a hazards review is made.